APPENDIX A

EXAMPLE COMMAND ALIAS

In an exemplary system environment **200** as shown in **Fig. 2**, the following Command Alias file is located in the #pragma Namespace ("\\\\.\\root\\ops") on a management station **202**:

Example: (Win32_NetworkAdapter class command alias)

```
instance of Microsoft_CliAlias
{
      Connection =
      instance of Microsoft_CliConnection
      {
            Locale = "ms_409";
            NameSpace = "ROOT\\CIMV2";
            Server = "BAMBAZONKI";
            };
      Descriptions = {
            instance of Microsoft_CliLocalizedString
            {
                  CodePage = 401;
                  Text = "The Win32_NetworkAdapter class represents a
network adapter on a Win32 system.";
                  }};
      Formats = {
            instance of Microsoft_CliFormat
            {
                  Name = "FULL";
                  Properties = {
                        instance of Microsoft_CliProperty
                        {
                              Derivation = "AdapterType";
                              Descriptions = {
                                    instance of
Microsoft_CliLocalizedString
                                    {
                                          CodePage = 401;
                                          Text = "The AdapterType
property reflects the network medium in use. This property may not be
applicable to all types of network adapters listed within this class.
Windows NT only.";
                                          }};
                              Name = "AdapterType";
                              },
                        instance of Microsoft_CliProperty
                        {
```

```
                                    Derivation = "AutoSense";
                                    Descriptions = {
                                          instance of
Microsoft_CliLocalizedString
                                          {
                                                CodePage = 401;
                                                Text = "A boolean indicating
whether the network adapter is capable of automatically determining the
speed of the attached/network media.";
                                                }};
                                    Name = "AutoSense";
                                    },
                              instance of Microsoft_CliProperty
                              {
                                    Derivation = "Availability";
                                    Descriptions = {
                                          instance of
Microsoft_CliLocalizedString
                                          {
                                                CodePage = 401;
                                                Text = "The availability and
status of the device.  For example, the Availability property indicates
that the device is running and has full power (value=3), or is in a
warning (4), test (5), degraded (10) or power save state (values 13-15
and 17). Regarding the power saving states, these are defined as
follows: Value 13 (\"Power Save - Unknown\") indicates that the device
is known to be in a power save mode, but its exact status in this mode
is unknown; 14 (\"Power Save - Low Power Mode\") indicates that the
device is in a power save state but still functioning, and may exhibit
degraded performance; 15 (\"Power Save - Standby\") describes that the
device is not functioning but could be brought to full power 'quickly';
and value 17 (\"Power Save - Warning\") indicates that the device is in
a warning state, though also in a power save mode.";
                                                }};
                                    Name = "Availability";
                                    },
                              instance of Microsoft_CliProperty
                              {
                                    Derivation = "Caption";
                                    Descriptions = {
                                          instance of
Microsoft_CliLocalizedString
                                          {
                                                CodePage = 401;
                                                Text = "The Caption property
is a short textual description (one-line string) of the object.";
                                                }};
                                    Name = "Caption";
                                    },
                              instance of Microsoft_CliProperty
                              {
                                    Derivation = "ConfigManagerErrorCode";
                                    Descriptions = {
                                          instance of
Microsoft_CliLocalizedString
                                          {
```

```
                                        CodePage = 401;
                                        Text = "Indicates the Win32
Configuration Manager error code.";
                                        }};
                                Name = "ConfigManagerErrorCode";
                                },
                        instance of Microsoft_CliProperty
                        {
                                Derivation = "ConfigManagerUserConfig";
                                Descriptions = {
                                        instance of
Microsoft_CliLocalizedString
                                        {
                                                CodePage = 401;
                                                Text = "Indicates whether the
device is using a user-defined configuration.";
                                                }};
                                Name = "ConfigManagerUserConfig";
                                },
                        instance of Microsoft_CliProperty
                        {
                                Derivation = "CreationClassName";
                                Name = "CreationClassName";
                                },
                        instance of Microsoft_CliProperty
                        {
                                Derivation = "Description";
                                Descriptions = {
                                        instance of
Microsoft_CliLocalizedString
                                        {
                                                CodePage = 401;
                                                Text = "The Description
property provides a textual description of the object. ";
                                                }};
                                Name = "Description";
                                },
                        instance of Microsoft_CliProperty
                        {
                                Derivation = "DeviceID";
                                Descriptions = {
                                        instance of
Microsoft_CliLocalizedString
                                        {
                                                CodePage = 401;
                                                Text = "The DeviceID property
contains a string uniquely identifying the network adapter from other
devices on the system.";
                                                }};
                                Name = "DeviceID";
                                },
                        instance of Microsoft_CliProperty
                        {
                                Derivation = "ErrorCleared";
                                Descriptions = {
```

```
                                    instance of
Microsoft_CliLocalizedString
                                    {
                                          CodePage = 401;
                                          Text = "ErrorCleared is a
boolean property indicating that the error reported in LastErrorCode
property is now cleared.";
                                          }};
                              Name = "ErrorCleared";
                              },
                        instance of Microsoft_CliProperty
                        {
                              Derivation = "ErrorDescription";
                              Descriptions = {
                                    instance of
Microsoft_CliLocalizedString
                                    {
                                          CodePage = 401;
                                          Text = "ErrorDescription is a
free-form string supplying more information about the error recorded in
LastErrorCode property, and information on any corrective actions that
may be taken.";
                                          }};
                              Name = "ErrorDescription";
                              },
                        instance of Microsoft_CliProperty
                        {
                              Derivation = "Index";
                              Descriptions = {
                                    instance of
Microsoft_CliLocalizedString
                                    {
                                          CodePage = 401;
                                          Text = "The Index property
indicates the network adapter's  index number, which is stored in the
system registry. \nExample: 0.";
                                          }};
                              Name = "Index";
                              },
                        instance of Microsoft_CliProperty
                        {
                              Derivation = "InstallDate";
                              Descriptions = {
                                    instance of
Microsoft_CliLocalizedString
                                    {
                                          CodePage = 401;
                                          Text = "The InstallDate
property is datetime value indicating when the object was installed. A
lack of a value does not indicate that the object is not installed.";
                                          }};
                              Name = "InstallDate";
                              },
                        instance of Microsoft_CliProperty
                        {
                              Derivation = "Installed";
```

```
                        Descriptions = {
                              instance of
Microsoft_CliLocalizedString
                              {
                                    CodePage = 401;
                                    Text = "The Installed property
determines whether the network adapter is installed in the
system.\nValues: TRUE or FALSE. A value of TRUE indicates the network
adapter is installed.";
                                    }};
                        Name = "Installed";
                        },
                  instance of Microsoft_CliProperty
                  {
                        Derivation = "LastErrorCode";
                        Descriptions = {
                              instance of
Microsoft_CliLocalizedString
                              {
                                    CodePage = 401;
                                    Text = "LastErrorCode captures
the last error code reported by the logical device.";
                                    }};
                        Name = "LastErrorCode";
                        },
                  instance of Microsoft_CliProperty
                  {
                        Derivation = "MACAddress";
                        Descriptions = {
                              instance of
Microsoft_CliLocalizedString
                              {
                                    CodePage = 401;
                                    Text = "The MACAddress
property indicates the media access control address for this network
adapter. A MAC address is a unique 48-bit number assigned to the network
adapter by the manufacturer. It uniquely identifies this network adapter
and is used for mapping TCP/IP network communications.";
                                    }};
                        Name = "MACAddress";
                        },
                  instance of Microsoft_CliProperty
                  {
                        Derivation = "Manufacturer";
                        Descriptions = {
                              instance of
Microsoft_CliLocalizedString
                              {
                                    CodePage = 401;
                                    Text = "The Manufacturer
property indicates the name of the network adapter's
manufacturer.\nExample: 3COM.";
                                    }};
                        Name = "Manufacturer";
                        },
                  instance of Microsoft_CliProperty
```

```
                        {
                              Derivation = "MaxNumberControlled";
                              Descriptions = {
                                    instance of
Microsoft_CliLocalizedString
                                    {
                                          CodePage = 401;
                                          Text = "The
MaxNumberControlled property indicates the maximum number of directly
addressable ports supported by this network adapter. A value of zero
should be used if the number is unknown.";
                                          }};
                              Name = "MaxNumberControlled";
                              },
                        instance of Microsoft_CliProperty
                        {
                              Derivation = "MaxSpeed";
                              Descriptions = {
                                    instance of
Microsoft_CliLocalizedString
                                    {
                                          CodePage = 401;
                                          Text = "The maximum speed, in
bits per second, for the network adapter.";
                                          }};
                              Name = "MaxSpeed";
                              },
                        instance of Microsoft_CliProperty
                        {
                              Derivation = "Name";
                              Descriptions = {
                                    instance of
Microsoft_CliLocalizedString
                                    {
                                          CodePage = 401;
                                          Text = "The Name property
defines the label by which the object is known. When subclassed, the
Name property can be overridden to be a Key property.";
                                          }};
                              Name = "Name";
                              },
                        instance of Microsoft_CliProperty
                        {
                              Derivation = "NetworkAddresses";
                              Descriptions = {
                                    instance of
Microsoft_CliLocalizedString
                                    {
                                          CodePage = 401;
                                          Text = "An array of strings
indicating the network addresses for an adapter.";
                                          }};
                              Name = "NetworkAddresses";
                              },
                        instance of Microsoft_CliProperty
                        {
```

```
                                    Derivation = "PermanentAddress";
                                    Descriptions = {
                                          instance of
Microsoft_CliLocalizedString
                                          {
                                                CodePage = 401;
                                                Text = "PermanentAddress
defines the network address hard coded into an adapter.  This 'hard
coded' address may be changed via firmware upgrade or software
configuration. If so, this field should be updated when the change is
made.  PermanentAddress should be left blank if no 'hard coded' address
exists for the network adapter.";
                                                }};
                                    Name = "PermanentAddress";
                                    },
                              instance of Microsoft_CliProperty
                              {
                                    Derivation = "PNPDeviceID";
                                    Descriptions = {
                                          instance of
Microsoft_CliLocalizedString
                                          {
                                                CodePage = 401;
                                                Text = "Indicates the Win32
Plug and Play device ID of the logical device.  Example: *PNP030b";
                                                }};
                                    Name = "PNPDeviceID";
                                    },
                              instance of Microsoft_CliProperty
                              {
                                    Derivation =
"PowerManagementCapabilities";
                                    Descriptions = {
                                          instance of
Microsoft_CliLocalizedString
                                          {
                                                CodePage = 401;
                                                Text = "Indicates the specific
power-related capabilities of the logical device. The array values,
0=\"Unknown\", 1=\"Not Supported\" and 2=\"Disabled\" are self-
explanatory. The value, 3=\"Enabled\" indicates that the power
management features are currently enabled but the exact feature set is
unknown or the information is unavailable. \"Power Saving Modes Entered
Automatically\" (4) describes that a device can change its power state
based on usage or other criteria. \"Power State Settable\" (5) indicates
that the SetPowerState method is supported. \"Power Cycling Supported\"
(6) indicates that the SetPowerState method can be invoked with the
PowerState input variable set to 5 (\"Power Cycle\"). \"Timed Power On
Supported\" (7) indicates that the SetPowerState method can be invoked
with the PowerState input variable set to 5 (\"Power Cycle\") and the
Time parameter set to a specific date and time, or interval, for power-
on.";
                                                }};
                                    Name = "PowerManagementCapabilities";
                                    },
                              instance of Microsoft_CliProperty
```

```
                        {
                              Derivation = "PowerManagementSupported";
                              Descriptions = {
                                    instance of
Microsoft_CliLocalizedString
                                    {
                                          CodePage = 401;
                                          Text = "Indicates that the
device can be power managed - i.e. can be put into suspend mode, etc.
This boolean does not indicate that power management features are
currently enabled, only that the logical device is capable of power
management.";
                                          }};
                              Name = "PowerManagementSupported";
                              },
                        instance of Microsoft_CliProperty
                        {
                              Derivation = "ProductName";
                              Descriptions = {
                                    instance of
Microsoft_CliLocalizedString
                                    {
                                          CodePage = 401;
                                          Text = "The ProductName
property indicates the product name of the network adapter.\nExample:
Fast EtherLink XL";
                                          }};
                              Name = "ProductName";
                              },
                        instance of Microsoft_CliProperty
                        {
                              Derivation = "ServiceName";
                              Descriptions = {
                                    instance of
Microsoft_CliLocalizedString
                                    {
                                          CodePage = 401;
                                          Text = "The ServiceName
property indicates the service name of the network adapter. This name is
usually shorter that the full product name. \nExample: Elnkii.";
                                          }};
                              Name = "ServiceName";
                              },
                        instance of Microsoft_CliProperty
                        {
                              Derivation = "Speed";
                              Descriptions = {
                                    instance of
Microsoft_CliLocalizedString
                                    {
                                          CodePage = 401;
                                          Text = "An estimate of the
current bandwidth in bits per second. For endpoints which vary in
bandwidth or for those where no accurate estimation can be made, this
property should contain the nominal bandwidth.";
                                          }};
```

```
                        Name = "Speed";
                        },
                    instance of Microsoft_CliProperty
                    {
                        Derivation = "Status";
                        Descriptions = {
                            instance of
Microsoft_CliLocalizedString
                            {
                                CodePage = 401;
                                Text = "The Status property is
a string indicating the current status of the object. Various
operational and non-operational statuses can be defined. Operational
statuses are \"OK\", \"Degraded\" and \"Pred Fail\". \"Pred Fail\"
indicates that an element may be functioning properly but predicting a
failure in the near future. An example is a SMART-enabled hard drive.
Non-operational statuses can also be specified. These are \"Error\",
\"Starting\", \"Stopping\" and \"Service\". The latter, \"Service\",
could apply during mirror-resilvering of a disk, reload of a user
permissions list, or other administrative work. Not all such work is on-
line, yet the managed element is neither \"OK\" nor in one of the other
states.";
                                };
                        Name = "Status";
                        },
                    instance of Microsoft_CliProperty
                    {
                        Derivation = "StatusInfo";
                        Descriptions = {
                            instance of
Microsoft_CliLocalizedString
                            {
                                CodePage = 401;
                                Text = "StatusInfo is a string
indicating whether the logical device is in an enabled (value = 3),
disabled (value = 4) or some other (1) or unknown (2) state. If this
property does not apply to the logical device, the value, 5 (\"Not
Applicable\"), should be used.";
                                };
                        Name = "StatusInfo";
                        },
                    instance of Microsoft_CliProperty
                    {
                        Derivation = "SystemCreationClassName";
                        Name = "SystemCreationClassName";
                        },
                    instance of Microsoft_CliProperty
                    {
                        Derivation = "SystemName";
                        Name = "SystemName";
                        },
                    instance of Microsoft_CliProperty
                    {
                        Derivation = "TimeOfLastReset";
                        Descriptions = {
```

```
                                    instance of
Microsoft_CliLocalizedString
                                    {
                                          CodePage = 401;
                                          Text = "The TimeOfLastReset
property indicates when the network adapter was last reset.";
                                          }};
                              Name = "TimeOfLastReset";
                              }};
                  }};
      FriendlyName = "Win32_NetworkAdapter";
      Target = "Select * from Win32_NetworkAdapter";
      Verbs = {
            instance of Microsoft_CliVerb
            {
                  Derivation = "SetPowerState";
                  Descriptions = {
                        instance of Microsoft_CliLocalizedString
                        {
                              CodePage = 401;
                              Text = "SetPowerState defines the desired
power state for a logical device and when a device should be put into
that state. The desired power state is specified by setting the
PowerState parameter to one of the following integer values: 1=\"Full
Power\", 2=\"Power Save - Low Power Mode\", 3=\"Power Save - Standby\",
4=\"Power Save - Other\", 5=\"Power Cycle\" or 6=\"Power Off\". The Time
parameter (for all state changes, except 5, \"Power Cycle\") indicates
when the power state should be set, either as a regular date-time value
or as an interval value (where the interval begins when the method
invocation is received). When the PowerState parameter is equal to 5,
\"Power Cycle\", the Time parameter indicates when the device should
power on again. Power off is immediate. SetPowerState should return 0 if
successful, 1 if the specified PowerState and Time request is not
supported, and some other value if any other error occurred.";
                              }};
                  Name = "SetPowerState";
                  Parameters = {
                        instance of Microsoft_CliParam
                        {
                              ParaId = "PowerState";

                              Type = "UINT16";
                              Descriptions;


                              },
                        instance of Microsoft_CliParam
                        {
                              ParaId = "Time";

                              Type = "DATETIME";
                              Descriptions;


                              }};
                  Usages = {
```

```
                        instance of Microsoft_CliLocalizedString
                        {
                              CodePage = 401;
                              Text = "SetPowerState";
                              }};
                  },
            instance of Microsoft_CliVerb
            {
                  Derivation = "Reset";
                  Descriptions = {
                        instance of Microsoft_CliLocalizedString
                        {
                              CodePage = 401;
                              Text = "Requests a reset of the logical
device. The return value should be 0 if the request was successfully
executed, 1 if the request is not supported and some other value if an
error occurred.";
                              }};
                  Name = "Reset";
                  Usages = {
                        instance of Microsoft_CliLocalizedString
                        {
                              CodePage = 401;
                              Text = "Reset";
                              }};
                  }};
      };
```

APPENDIX B

EXAMPLE XSL FILE

In an exemplary system environment **200** as shown in **Fig. 2**, the following XSL files are used to format the display for a list of properties returned through a command alias:

Example 1: (WmiCmdTableFormat.xsl)

```
<?xml version="1.0" ?>
- <xsl:stylesheet xmlns:xsl="http://www.w3.org/TR/WD-xsl">
  - <xsl:template match="/" xml:space="preserve">
      Name: Value:
    - <xsl:for-each select="CIM//INSTANCE/PROPERTY">
        <xsl:value-of select="@NAME" />
        :
        <xsl:value-of select="VALUE" />

      </xsl:for-each>

    </xsl:template>
  </xsl:stylesheet>
```

Example 2: (WmiCmdValueFormat.xsl)

```
<?xml version="1.0" ?>
- <xsl:stylesheet xmlns:xsl="http://www.w3.org/TR/WD-xsl">
  - <xsl:template match="/" xml:space="preserve">

    - <xsl:for-each select="CIM//INSTANCE/PROPERTY">
        <xsl:value-of select="VALUE" />

      </xsl:for-each>

    </xsl:template>
  </xsl:stylesheet>
```

APPENDIX C

COMMAND LINE BNF

<WMICommand>	::=	WMIC [<global switch list>] <command>
<global switches list>	::=	<global switches>|<global switches><global switches list>
<global switches>	::=	(/NAMESPACE | /ROLE) [:<namespace>] | /NODE [:<machine id>] | /IMPLEVEL [:<ilevel>] | /AUTHLEVEL [:<alevel>] | /LOCALE [:<locale identifier>] | /PRIVILEGES [:<property>] | /TRACE [:<option>] | /RECORD [:<file path>] | /INTERACTIVE /USER [:<user id>] | /PASSWORD [:<password id>] | /? [:<help type>]
<command >	::=	(<alias> [<WMI object>] | [<alias>] <path where>) [<verb clause>] | EXIT | CLASS [<class path expression >] [<verb clause>] |
<path where>	::=	PATH (<path expression> | <class path expression>)| WHERE <where clause>
<alias>	::=	!! name for the alias. The name will be unique in the context of the namespace in which the alias is defined. Note CLASS, PATH, WHERE and EXIT cannot be used as alias names as they appear in the same location in the syntax.
<WMI object>	::=	<alias parameters>
<path expression>	::=	!! A WMI path expression including a key clause
<where clause>	::=	!! A WQL where clause
<class path expression >		!! A WMI path expression that does not include key clause
<alias parameters>	::=	!! one or more space delimited literals that will be used as substitutions in the alias's PWhere value. Note this and the three previous productions terminate with either a "/" character indicating a switch or verb or with the end of line marking the termination of the command
<verb clause>	::=	(<verb> [<verb parameters>] | <standard verb>) [<verb switches>]
<verb>	::=	<property name> | <identifier> | <method name>
<verb switches>	::=	/INTERACTIVE | /NOINTERACTIVE |

<verb parameter>	::=	<actual parameter> | <actual parameter> , <verb parameter>
<standard verb>	::=	<get verb> | <list verb> | <assoc verb> | <call verb> | <set verb>
<identifier>	::=	<idhead> [<idrest>]
<idhead>	::=	<letter>
<idrest>	::=	<identifier> [<letter> | <digit>]
<get verb>	::=	GET [<property list>] [<get switches>]
<property list>	::=	<property name> | <property name> , <property list>
<list verb>	::=	LIST [<list format>|<list switches>]
<assoc verb>	::=	ASSOC [<format specifier>]
<call verb>	::=	CALL <method name> [<actual parameter list>]
<actual parameter list>	::=	<actual parameter> | <actual parameter , <actual parameter list>
<set verb>	::=	SET <assign list>
<assign list>	::=	<property name> = <property value> | <property name> = <property value> <assign list>
<get switches>	::=	/VALUE | /ALL | /TRANSLATE | /EVERY :<interval> | /FORMAT [:<format specifier>] | /DESCRIPTION [:<code page>]
<interval>	::=	!! numeric value indicating frequency within which values should be returned
<formatspecifier>	::=	:<xsl file name> | :TABLE | : MOF
<list format>	::=	BRIEF | INSTANCE | SYSTEM | STATUS | FULL | <user format>
<list switches>		/TRANSLATE | /EVERY :<interval> /FORMAT [:<format specifier>]
<help type>	::=	: BRIEF | : FULL

APPENDIX D

EXAMPLES OF COMMAND LINE PROCESSING

General

A.1 Global Switches (Qualifiers) Usage:

Global switches (to the right of the "$ wmic") denote operations that operate at the full context of the command. Therefore, these switchers apply to an entire session established by the command.

$ wmic /?

Display command global switches and all registered aliases.

$ wmic /locale 40b

specify Finnish for localization (impersonation)

$ wmic *INODE*

Which node to connect to for getting info

$ wmic /NODE /? //Discover mgmt arenas <based on namespaces>
defaults to \\root\cli>

Network	- manage the network subsystem namespace
Apps	- manage applications namespace
System	- manage operating system namespace
Devices	- manage devices namespace
Users	- manage users namespace
DB	- manage DBAs namespace

$ wmic /NODE \\root\cimv2 //Escape to preferred namespace

$ wmic /NODE \\remoteServerA \\root\cimv2\applications

set operations against aliases on the specified namespace of ***remoteServerA \\root\cimv2\applications***

$ wmic /NODE system /? //Discover any available sub scopes

Processor	- manage the network subsystem <alias>
Bios	- manage BIOS functions
Disks	- manage storage
LogDrives	- manage logical drive partitions
Process	- manage operating processes
Service	- manage system services
DCOM	- manage DCOM Configuration
Scheduling	- manage jobs

$ wmic /trace

output all debugging info to {stderr}

A.2 Command Line Alias

An example of a printer alias is as follows:

$ wmic printer

 # Where 'printer' is defined as an alias for WIN32_PRINTER is equivalent to the following class escape:

$ wmic *CLASS WIN32_PRINTER*

A.3 Verb Usage

Standard Verb Operations

$ wmic {alias} {verb} /?

[Display description, switches, and parameters]
[Display description, verb, and Keyword info for the specified alias. Verbs available to aliases (*Only supported standard verbs for an alias will be shown*) include:

GET	Data get operations
SET	Data set operations
CALL	Method, execution operations
LIST	Show data (like netsh, etc.)
ASSOC	Associate operation/data according to specified format.

GET Operations

$ wmic {alias} GET /?

Display get switches and all properties for the specified object and its descriptions. If the object was an ALIAS - only the properties that are defined for that alias are displayed (**whether view object, scopes, containers, etc.**). These properties map to properties on the referred to WMIOBJECT but can have different (user friendly) names. If the object was a WMI CLASS NAME (eg. wmic CLASS WIN32_PRINTER GET /?) then the properties come from the class itself.

GET SWITCHES include:

/VALUE (default)	Return value (mapped if required)
/DESCRIPTION	Return description
/ALL	Return the data and metadata for attribute
/TRANSLATE	Translate return value via UNIX TR semantics. Useful for exporting to CSVs
/EVERY	Return values every (X interval) seconds

/FORMAT	Keyword OR XSL filename to process XML Results.

Example of a user-friendly command:

$ wmic system\process GET /FORMAT :TABLE * EXECUTABLEPATH

```
401     E:\\Program Files\\Internet Explorer\\IEXPLORE.EXE
402     E:\WINNT\system32\psxss.exe
1232    E:\WINNT\system32\msiexec.exe
```

A user-friendly command:

$ wmic system\process GET /DESCRIPTION : 401 *ExecutablePath PageFaults*

PageFileUsage PageFileUsage		
HANDLE	401	A string used to identify the process. A process ID is a process handle.
ExecutablePath	E:\\Program Files\\Internet Explorer\\IEXPLORE.EXE	The ExecutablePath property indicates the path to the executable file of the process
PageFaults	3062	The PageFaults property indicates the number of page faults generated by the process.

The user-friendly command:

$ wmic system\process WHERE (Caption = "SPOOLSV.EXE") GET *Threads , Faults* /FORMAT : TABLE /EVERY :15

```
532     10      3062
532     12      3093
532     11      3102
...
```

 # A new line is printed every 15 seconds

Is equivalent to the following:

$ wmic CLASS WIN32_PROCESS WHERE (Caption = "SPOOLSV.EXE") GET *ThreadCount, PageFaults* /FORMAT :TABLE /EVERY: 15

```
532     10      3062
532     12      3093
532     11      3102
...
```

 # Note that different property names from the previous example.
The previous example had # user-friendly names but this refers to the WMI class so it uses its property names.

SET Operations

The interactive command syntax:

$ wmic users\accounts WHERE(domain=Redmond AND disabled=false AND locked=true) SET disabled=true /INTERACTIVE

```
disable account Redmond\Travism[y/n]y
  account disabled
disable account Redmond\UserJoe[y/n]n
  account skipped
disable account Redmond\j-mier[y/n]y
  account disabled
```

LIST Operations

$ wmic {alias} LIST /?

[Display swithes and options. Switches include:

/FULL	Return the full set of properties
/BRIEF	Return a BRIEF set of the properties
/INSTANCE	Return just the instance names
/TRANSLATE	Translate return value via UNIX TR semantics. Useful for exporting to CSVs
/EVERY	Return values every X (specified interval) seconds
/SYSTEM	Show system properties
/FORMAT	Specify an XSL to format data
/STATUS	Show the status of the object
/CONFIG	Return the configuration of the component
/<user format>	Show what the user format is.

The user-friendly command syntax:

$ wmic system\process LIST

```
HANDLE      NAME  PATH
======      ====  ====
401     IEXPLORE.EXE E:\\Program Files\\Internet Explorer\\IEXPLORE.EXE
402     psxss.exe     E:\WINNT\system32\psxss.exe
1232    msiexec.exe   E:\WINNT\system32\msiexec.exe
1103    svchost.exe   E:\WINNT\System32\svchost.exe
        ...
```

The user-friendly command syntax, using BRIEF qualifier:

$ wmic system\process 1103 LIST *brief*

Handle 1103

```
Name   svchost.exe
ExecutationPath E:\WINNT\System32\svchost.exe
PageFaults      3062
PageFileUsage 3481600
...
```

The user-friendly command syntax, using FULL switch:

```
$ wmic system\process 401list full
        Caption = "notepad.exe";
        CreationClassName = "Win32_Process";
        CreationDate = "20000414150141.596597-420";
        CSCreationClassName = "Win32_ComputerSystem";
        CSName = "JSNOVER004";
        Description = "notepad.exe";
        ExecutablePath = "E:\\WINNT\\System32\\notepad.exe";
        Handle = "1172";
        HandleCount = 21;
        KernelModeTime = "36852992";
        MaximumWorkingSetSize = 1413120;
        MinimumWorkingSetSize = 204800;
        Name = "notepad.exe";
        OSCreationClassName = "Win32_OperatingSystem";
        OSName = "Microsoft Windows 2000 Professional
|E:\\WINNT|\\Device\\Harddisk0\\Partition2";
        OtherOperationCount = "9";
        OtherTransferCount = "0";
        PageFaults = 299;
        PageFileUsage = 282624;
        ParentProcessId = 288;
        PeakPageFileUsage = 290816;
        PeakVirtualSize = "14680064";
        PeakWorkingSetSize = 1105920;
        Priority = 8;
        PrivatePageCount = "282624";
        ProcessId = 401;
        QuotaNonPagedPoolUsage = 1876;
        QuotaPagedPoolUsage = 17284;
        QuotaPeakNonPagedPoolUsage = 1928;
        QuotaPeakPagedPoolUsage = 17988;
        ReadOperationCount = "0";
        ReadTransferCount = "0";
        SessionId = 0;
        ThreadCount = 1;
        UserModeTime = "4907056";
        VirtualSize = "14667776";
        WindowsVersion = "5.0.2195";
        WorkingSetSize = "1101824";
        WriteOperationCount = "0";
```

WriteTransferCount = "0";

$ wmic system\process *where (name = svchost.exe)* list full

Handle 1103
Name svchost.exe
ExecutationPath E:\WINNT\System32\svchost.exe
PageFaults 3062
PageFileUsage 3481600
...

Advanced Scenarios Available to the User

I want to be able to list printers on a server, view status like out of paper…

$ wmic /NODE:servername devices\printer LIST DetectedErrorState

Name	Port	DetectedErrorState
HP LaserJet 4Si	LPT1:	No Error
\\ntprint\By DaveTh	40_hall2 npide99b9	No Paper
\\corp1\ntprinter2	44_4 aod444	Low Toner

++

I want to be able to pause or delete jobs, change properties…

$ wmic printjob Where(Name=\\corp1\ntprinter2 and Size > 1000000) kill /interactive

146 Microsoft Word - DVD-RAM.doc [y/n]y
deleted
147 Microsoft Word - Life of Brian.doc[y/n]n
148 Microsoft Word - Whistler Plan[y/n]Y
deleted

++

I also want to restrict certain printer description to 48 chars for DOS clients even though schema allows 256.

$ wmic CLASS WIN32_printer WHERE (Name=HP LaserJet 4Si) SET DESCRIPTION "this is a test of the length of a description"

$ wmic printer WHERE (Name=HP LaserJet 4Si) SET *DESC "this is a test of the length of a description"*

ERROR: Text ("this is a test of the length of a description") too long

#Note that the first one succeed and it's name was "Description" the second one failed and it's name was DESC. This is because the Alias specified as PROPERTY DESC that mapped to DESCRIPTION but had

additional semantic/restrictions. In this case it had a short MAX_LENGTH

++//

need help occasionally because i can't always remember the syntax…

$ wmic /ROLE/?

```
Network
Apps
System
Devices
Users
DB
```

$ wmic system /?

```
Processor
Bios
Disks
LogDrives
        Process
Service
DCOM
Scheduling
```

$ wmic system\printer /?

```
PRINTER
    GET                 - Get parameters
    SET                 - Set Parameters
    CYCLE               - Cycle Power
    SETPOWERSTATE       - Set power state
    ........
```

$ wmic system\printer GET /?

Property	Type	Operation
====	====	=========
Availability	INT16	Read-Only
AveragePagesPerMinute	INT32	Read-Only
Caption	String	Read\Write
DriverName	String	Read-Only
PortName	String	Read-Only
...		

$ wmic system\printer SET /?

Property	Type
====	====
Caption	String
...	

$ wmic system\printer CALL /?

Call	Input Param(s)&Type	Status
======	=================	===========
reset		Implemented
setpowerstate	powerstate(int16)	
	time(date/time)	Implemented

Verifies in WMI schema qualifier if the method is implemented.

$ wmic system\printer CALL /? : brief

Call	*Input Param(s)&Type*	*Status*
======	=================	===========
reset		*Implemented*
setpowerstate	*powerstate(int16)*	
	time(date/time)	*Implemented*

$ wmic system\printer GET /? : brief

Property	*Type*	*Operation*
====	====	=========
Availability	*INT16*	*Read-Only*
AveragePagesPerMinute	*INT32*	*Read-Only*
Caption	*String*	*Read\Write*
DriverName	*String*	*Read-Only*
PortName	*String*	*Read-Only*
...		

$ wmic system\printer GET *\\corp00\ntprint1 Availability* /? : full

Property	*Type*	*Operation*
====	====	=========
Availability	*INT16*	*Read-Only*

Description:

The availability and status of the device. For example, the Availability property indicates that the device is running and has full power (value=3), or is in a warning (4), test (5), degraded (10) or power save state (values 13-15 and 17). Regarding the power saving states, these are defined as follows: Value 13 ("Power Save - Unknown") indicates that the device is

known to be in a power save mode, but its exact status in this mode is unknown; 14 ("Power Save - Low Power Mode") indicates that the device is in a power save state but still functioning, and may exhibit degraded performance; 15 ("Power Save - Standby") describes that the device is not functioning but could be brought to full power 'quickly'; and value 17 ("Power Save - Warning") indicates that the device is in a warning state, though also in a power save mode.

$ wmic system/printer CALL /? : full

Call	*Input Param(s)&Type*	*Status*
reset		*Implemented*

Description:

Requests a reset of the logical device. The return value should be 0 if the request was successfully executed, 1 if the request is not supported and some other value if an error occurred.

Call	*Input Param(s)&Type*	*Status*
setpowerstate	*powerstate(int16)*	
	time(date/time)	*Implemented*

Description:

SetPowerState defines the desired power state for a logical device and when a device should be put into that state. The desired power state is specified by setting the PowerState parameter to one of the following integer values: 1="Full Power", 2="Power Save - Low Power Mode", 3="Power Save - Standby", 4="Power Save - Other", 5="Power Cycle" or 6="Power Off". The Time parameter (for all state changes, except 5, "Power Cycle") indicates when the power state should be set, either as a regular date-time value or as an interval value (where the interval begins when the method invocation is received). When the PowerState parameter is equal to 5, "Power Cycle", the Time parameter indicates when the device should power on again. Power off is immediate. SetPowerState should return 0 if successful, 1 if the specified PowerState and Time request is not supported, and some other value if any other error occurred.